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API

• 1988 •

Survey on Oil & Gas Expenditures

For Exploration,
Development and Production

American
Petroleum
Institute

Table of Contents

Page

Preface v
Summary of Results 1
Survey Purpose and Coverage 4
Sample 4
Estimation Methodology 5

Tables:

Table I: Summary of Expenditures by Major Categories: 1988, 1987, 1986 1
Table II: Estimated Expenditures for Exploration, Development, and Production, by Geographic Area 2
Table III: Estimated Expenditures for Exploration, Development, and Production by Company Size (19 Largest Companies) 3
Table IV: Estimated Net Oil & Gas Lease Revenues, by Geographic Regions, and the Sample Representation 5
Table V: Estimated Gross and Net Revenues from Crude Oil and Natural Gas Production: 1988, 1987, 1986 6
Table VI: Total Net Lease Revenues, by Revenue Source, and by Geographic Areas: 1988, 1987, 1986 6
Table VII: Production and Revenues for the 19 Largest Companies 7

Appendix A: Oil and Gas Expenditure Survey Questionnaire and Instructions 9

Preface

The 1988 *Survey on Oil & Gas Expenditures* (SOGE), conducted by the American Petroleum Institute, contains the results of the 29th annual survey on oil and gas expenditures. The report describes spending activity in the search for and the production of oil and gas in the United States in 1988. In addition to data for the total United States, subcategories include: Onshore Lower 48 States, Offshore Lower 48 States, and Alaska. Also, the 19 largest companies according to net oil and gas lease revenues are compared to the rest of the industry.

The oil and gas expenditures survey has been conducted in its present form by the API beginning with survey year 1983. From 1973 to 1982, the Bureau of Census collected these data in the *Annual Survey of Oil and Gas*, and then discontinued its survey for budgetary reasons with the completion of the 1982 report.

Prior to the Census survey, from 1959 through 1975, oil and gas expenditures data were collected by the API as Section II of the *Joint Association Survey on Drilling Costs* (JAS). The API discontinued Section II of the JAS after publishing 1975 data, following a three-year parallel test period with the Census to ensure that its results were comparable to the API survey data.

In response to numerous requests by industry and non-industry analysts for continued information on upstream expenditures, the API resumed collecting these data after the Census Bureau discontinued its annual oil and gas expenditures survey. The definitions and instructions for the API survey are almost identical to those used by the Census Bureau, with the exception that some detailed information was not requested from respondents by the API survey. All major expenditure categories and their components are the same.

Washington, D.C.
October, 1989

U.S. Oil and Gas Industry Expenditures for Exploration, Development and Production

Summary of Results

Domestic spending in the oil and gas industry increased in 1988 by 13.1 percent to $47 billion, compared to $42 billion for 1987. Much of this increase reflects an industry-wide rise of 21.2 percent in spending on exploration and development drilling.

This is consistent with trends in drilling activity. Although the number of wells completed continued to decrease last year, wells were deeper and drilling costs higher. Also, more gas wells were drilled (see Table I).

Domestic spending increased in most categories, with spending on lease and land acquisitions of non-producing acreage showing the greatest amount of change. Spending on lease and land acquisitions of non-producing acreage rose by 81.2 percent, an increase of $1.4 billion (see Table II).

This increase in expenditures for acquiring undeveloped acreage contributed to a slight shift in the proportion of exploration to development spending, toward exploration spending. However, the industry continues to allocate the larger proportion of total expenditures to development spending.

There were no net windfall profit tax expenditures in 1988. However, the industry received net refunds of $122 million last year due to windfall profit tax overpayments during prior years. "Other" tax payments decreased 0.9 percent to $4.2 billion, exceeding windfall profits taxes for the fourth year in a row.

Although the number of top-ranked companies (according to net oil and gas lease revenues) remained at 19 this year, two of the companies included in this year's report were different from last year. The revenue represented by this group, however, remained the same.

Exploratory Drilling Up. The oil and gas industry spent $9.8 billion on exploration in 1988, 28.5 percent more than the year before. This increase was due primarily to a large increase in acquiring undeveloped acreage spending. Exploratory drilling expenditures were up as well (see Table II).

The rise in exploration spending in 1988 was mostly due to the major oil companies' efforts, which accounted for 57.7 percent of total exploration expenditures that year. Spending by the majors on lease and land acquisitions for non-producing acreage increased substantially, from $798 million in 1987 to $1,976 million in 1988.

A 22.1 percent increase in exploratory drilling by major oil companies also contributed to the overall increase in exploratory spending. Spending was also

Table I
DRILLING AND EQUIPPING EXPENDITURES, 1986-1988
(Million Dollars)

	1988	% change	1987	% change	1986
United States	$ 9,760	28.5	$ 7,595	-10.3	$ 8,496
Exploration:	3,054	28.9	2,369	-22.3	3,048
Drilling & Equipping	6,706	28.3	5,226	- 4.1	5,448
All Other					
Development:	$14,197	16.7	$12,164	-25.7	$16,380
Drilling & Equipping	8,002	8.7	7,362	-20.5	9,257
All Other	6,195	29.0	4,802	-32.6	7,123
Production:	$23,353	5.8	$22,083	- 6.1	$23,525
Direct Expenditures	15,131	11.3	13,592	- 7.7	14,720
Indirect Expenditures	8,222	- 3.2	8,491	- 3.6	8,805
Total Expenditures	$47,310	13.1	$41,846	-13.5	$48,401

TABLE II
1988 Estimated Expenditures For Exploration, Development, and Production By Geographic Area

(Million Dollars)

	Total U. S.	Percentage Change	Lower 48 Onshore	Lower 48 Offshore	Total Alaska
EXPLORATION EXPENDITURES:					
Total Drilling & Equipping Expenditures	$ 3,054	28.9%	$ 1,805	$ 1,237	$ 12
Total Completed Well Costs	3,004	34.2	1,707	1,264	33
Oil Wells	319	4.3	274	42	3
Gas Wells	582	24.1	414	157	11
Dry Holes	2,103	43.6	1019	1,065	19
Work-in-Progress	50	NM	98	-27	-21
Acquiring Undeveloped Acreage	3,053	81.2	1,591	846	616
Land Dept., Leasing & Scouting	232	1.5	203	22	7
Geological & Geophysical	1,276	6.9	817	403	56
Lease Rents	267	-7.7	185	55	27
Test Hole Contributions	7	79.8	1	2	4
Other, incl. Direct Overhead			NA	NA	NA
and G & A Overhead	1,871	2.4	NA	NA	NA
Total Exploration Expenditures	$ 9,760	28.5%	NA	NA	NA
DEVELOPMENT EXPENDITURES:					
Total Drilling & Equipping Expenditures	$ 8,002	8.7 %	$ 5,961	$ 1,624	$ 417
Total Completed Well Costs	7,539	7.8	5,833	1,393	313
Oil Wells	3,155	-8.9	2,384	463	308
Gas Wells	3,018	31.8	2,482	535	1
Dry Holes	1,366	10.0	967	395	4
Work-in-Progress	463	NM	128	231	104
Lease Equipment	2,706	17.4	1,695	870	141
Fluid Injection & Impr. Recov. Programs	1,047	39.1	931	70	46
Other, incl. Direct Overhead			NA	NA	NA
and G & A Overhead	2,442	40.0	NA	NA	NA
Total Development Expenditures	$14,197	16.7%	NA	NA	NA
PRODUCTION EXPENDITURES:					
Total Direct Operating	$15,131	11.3%	$11,644	$ 2,437	$ 1,050
Operating & Maintenance	12,249	8.0	9,629	1,832	788
Well Workovers	1,507	18.2	994	406	107
Other Direct Expenses	1,375	40.5	1,021	199	155
Total Indirect Operating	$ 8,222	-3.2%	$ NA	$ NA	$ NA
Windfall Profits Tax	-122	NM	-133	-6	17
Other Taxes (excl. income taxes)	4,162	-0.9	3,163	105	894
G & A Overhead and					
Other Indirect Expenditures	4,182	-8.1%	NA	NA	NA
Total Production Expenditures	$23,353	5.8%	NA	NA	NA
TOTAL EXPENDITURES	$47,310	13.1%	NA	NA	NA

NA Not Available NM Not Meaningful

Windfall profits tax includes refunds due to overpayment in prior years.

TABLE III
1988 Estimated Expenditures For Exploration, Development, and Production By Company Size (19 Largest Companies)

(Million Dollars)

	19 Largest Companies	Percentage Change	Percent of Total	All Other Companies	Percentage Change
EXPLORATION EXPENDITURES:					
Total Drilling & Equipping Expenditures	$ 1,188	22.1%	38.9%	$ 1,866	33.7%
Total Completed Well Costs	1,143	33.4	38.0	1,861	34.7
Oil Wells	87	-17.9	27.3	232	16.0
Gas Wells	189	19.6	32.5	393	26.4
Dry Holes	867	46.2	41.2	1,236	41.9
Work-in-Progress	45	NM	NM	5	NM
Acquiring Undeveloped Acreage	1,976	147.6	64.7	1,077	21.4
Land Dept., Leasing & Scouting	138	3.5	59.4	94	-1.2
Geological & Geophysical	895	5.0	70.1	381	11.5
Lease Rents	156	0.0	58.6	111	-16.9
Test Hole Contributions	7	131.8	96.7	0	NM
Other, incl. Direct Overhead and G & A Overhead	1,275	11.0	68.2	$ 596	-12.0
Total Exploration Expenditures	$ 5,635	38.7%	57.7%	$ 4,125	16.8%
DEVELOPMENT EXPENDITURES:					
Total Drilling & Equipping Expenditures	$ 3,143	1.9%	39.3%	$ 4,859	13.6%
Total Completed Well Costs	2,619	-0.3	34.7	4,920	12.6
Oil Wells	1,275	-25.7	40.4	1,880	7.6
Gas Wells	920	62.0	30.5	2,098	21.8
Dry Holes	424	24.3	31.0	942	4.6
Work-in-Progress	524	NM	NM	-61	NM
Lease Equipment	2,114	23.8	78.1	592	-0.8
Fluid Injection & Impr. Recov. Programs	893	32.1	85.3	154	100.0
Other, incl. Direct Overhead and G & A Overhead	1,413	38.9	57.9	1,029	41.5
Total Development Expenditures	$ 7,563	16.6%	53.3%	$ 6,634	16.9%
PRODUCTION EXPENDITURES:					
Total Direct Operating	$ 9,723	14.5%	64.3%	$ 5,408	6.0%
Operating & Maintenance	7,476	8.6	61.0	4,773	7.1
Well Workovers	1,047	24.2	69.5	461	6.7
Other Direct Expenses	1,200	56.4	87.3	175	-17.5
Total Indirect Operating	$ 4,921	-5.9%	59.9%	$ 3,301	1.3%
Windfall Profits Tax	-119	NM	NM	-3	NM
Other Taxes (excl. income taxes)	2,803	-1.4	67.4	1,359	0.2
G & A Overhead and Other Indirect Expenditures	2,237	-15.5	53.5	1,945	2.26
Total Production Expenditures	$14,644	6.7%	62.7%	$ 8,709	4.2%
TOTAL EXPENDITURES	$27,842	14.7%	58.9%	$19,468	10.8%

NM Not Meaningful
Largest 19 companies based on net oil and gas lease revenues.

up in this category for the rest of the industry, by 33.7 percent.

The top 19 companies spent 17.9 percent less on oil exploration drilling and equipping in 1988 compared to 1987. However, a 16 percent increase in oil drilling expenditures by all other companies contributed to an overall increase in this category of 4.3 percent (see Table III).

Alaska Development Drilling Up. Total development spending in the United States rose by 16.7 percent in 1988 to $14.2 billion, fueled by an increase in development drilling expenditures of 8.7 percent. Alaskan development drilling spending increased by 34.1 percent. Offshore development gas drilling expenditures increased by 71.5 percent (see Table II).

Development drilling spending by the majors was up 1.9 percent to $3.1 billion, despite a 25.7 decrease in development oil drilling expenditures. This was due primarily to a 62 percent increase in spending on gas drilling. Development drilling spending by the rest of the industry was up 13.6 percent to $4.9 billion in 1988 compared to 1987.

Spending on other development,including direct overhead and G&A overhead, also contributed to the overall increase in development expenditures during 1988. "Other" expenditures increased by 40 percent to $2.4 billion this year.

Offshore Operating & Maintenance Up. In 1988, total production expenditures were $23.4 billion compared to $22.1 billion in 1987. This represents an increase of 5.8 percent, attributed mostly to an increase in spending on operating and maintenance. Operating and maintenance expenditures in 1988 were up $911 million from 1987, to $12.2 billion.

Net windfall profit tax (WPT) gains decreased from $259 million in 1986 to $122 million in 1988 (see Table II). These gains represent net refunds from WPT overpayments in prior years. Only 6.6 percent of the companies reported showed WPT payments in 1988. The WPT was repealed on August 23, 1988, which will effect crude oil produced on or after that date.

Spending on well workovers in Alaska more than doubled in 1988, to $107 million. Well workover spending was up in onshore and offshore lower-48, by 5.5 percent and 41 percent, respectively.

Survey Purpose and Coverage

The API *Survey on Oil & Gas Expenditures (SOGE)* provides annual information on expenditures related to finding, developing, and producing oil and natural gas in the United States. These estimates are derived from a sampling of companies that responded to a questionnaire requesting detailed information by expenditure category and by geographic location.

Estimated expenditures are derived from the survey responses by regressing reported expenditures in each category on total revenues for each company in the sample. The estimated models of expenditures are then used to derive average and total expenditures for non-reporting companies in each of 13 size classes. The estimated unreported expenditures are then added to the survey responses to arrive at total expenditure estimates.

The *SOGE* was designed to be compatible in format with the earlier Census Bureau survey, but differs significantly in coverage and scope. For example, completed well costs in *SOGE* are taken from the API's *Joint Association Survey on Drilling Costs (JAS)*, while the Census estimates were based on its survey responses.

The *JAS* drilling cost estimates are used since respondents to the *JAS* represent a larger percentage of total activity than do the *SOGE* respondents, and provide more reliable estimates of drilling expenditures. However, it is important to note that *JAS* wells are classified as either exploratory or development using the Lahee classification system, while the Census data was classified according to Financial Accounting Standards Board definitions.

Since the Lahee system uses more restrictive definitions for exploratory wells, the *SOGE-JAS* will report relatively lower exploratory and higher development expenditures than the Census survey.

The readers should also be aware that *SOGE* development expenditures do not include acquisition costs for producing acreage as were included in the Census survey. These expenditures were excluded from the *SOGE* because they do not represent new investment in the industry, but rather show the exchange of assets among companies.

The *API Survey on Oil and Gas Expenditures* includes in its estimates expenditures by non-operating as well as by operating companies. In this case, non-operating companies are those whose primary line of business is other than oil and gas extraction, but that do invest in oil and gas operations. These companies were not included in the 1982 Census of Mineral Industries.

The Sample

The 1988 sample contains data from those companies replying to a questionnaire mailed to oil and

gas operators throughout the United States. The mailing list used is the same one developed for the *Joint Association Survey on Drilling Costs*. The questionnaire and instructions for the *SOGE* are shown in Appendix A.

The 1988 *SOGE* estimates are based on data reported by 333 companies whose net revenue accounted for 66.1 percent of the total estimated net revenues from oil and gas production. Table IV, below, presents the total estimated and sample revenues by geographic regions.

The 1988 *SOGE* sample includes 17 of the top 19 companies ranked by net oil and gas lease revenue. It also includes 50 of an estimated 99 active offshore companies, and 19 operators in Alaska.

Table IV
Estimated Net Oil & Gas Lease Revenues and Revenues Reported to SOGE
(million dollars)

	Total U. S.	Lower 48 Onshore	Lower 48 Offshore	Total Alaska
Net Revenue from Oil & Gas Production				
1988:	$ 57,204	$38,439	$12,846	$5,919
1987:	64,844	43,729	13,931	7,184
1986:	59,471	40,258	14,898	4,315
Net Oil & Gas Revenues Reported				
1988:	37,799	22,604	9,508	5,687
1987:	44,034	26,015	10,931	7,088
1986:	41,012	25,896	11,262	3,854
Percent Reported				
1988:	66.1	58.8	74.0	96.1
1987:	67.9	59.5	78.5	98.7
1986:	69.0	63.6	75.6	89.3

SOGE Estimation Methodology

Expenditures on exploration, development, and production are set up to vary positively with revenues from oil and gas activities, and companies with similar size revenues are assumed to have similar expenditure patterns. The *SOGE* sample of respondent companies, though not randomly selected, is assumed to represent the spending patterns of non-reporting companies.

Total oil and gas revenues from the sample, were used to estimate revenues for non-reporting companies.

The next step was to use the survey responses to model expenditure patterns for different size groupings of companies. These models were then used to estimate expenditures for the non-reporting companies based on their number and revenues. The general procedure followed was to work from data and/or areas with a high degree of certainty, and then to move to data and/or areas with progressively higher levels of uncertainty.

Estimating the Survey Universe. The total gross revenues from oil and gas production are based on data published by the Department of Energy's Energy Information Administration (EIA). Crude oil revenues are based on total crude oil production, as published in the EIA's *Petroleum Supply Annual*, multiplied by the average crude oil wellhead value.

Natural gas revenues are based on the value of marketed production as published in EIA's *Natural Gas Annual*.

Since the revenues reported to the *SOGE* are on a net basis, it was necessary to reduce the gross revenue data to a net income basis. That is, gross revenues for crude oil and natural gas production were reduced by the amount of royalties paid by oil and gas operators. The assumption was made that royalty disbursements, on average, account for approximately 15 percent of the gross revenues, although it is acknowledged that offshore royalty payments are higher. Table V summarizes the gross and net revenues estimated for 1988 and earlier years.

Crude oil and natural gas production revenues account for the major share of revenues available to the oil and gas producing industry. But, additional revenues also come from royalty payments received by oil and gas operators and from other lease income incidental to oil and gas operations. Estimates for both royalty payments received and other lease income were developed from the sample data and extrapolated to a U.S. total. Table VI shows the 1988 total net lease revenues by source for each geographic area.

Once total net revenues were estimated, they were subdivided into 13 size classes based on the distribution of the revenues of companies responding to the 1988 *SOGE*.

For the 1988 Survey, revenues for the top two size classes were known with a high degree of certainty from sample and publicly available information. Revenues for the next four largest size classes were estimated based on the sample and the 1987 distribution. Revenues for these top six size classes represent over 92 percent of the total 1988 net oil gas revenues. The revenues not accounted for in the top six size classes were distributed based on their 1987 revenue shares and the 1988 sample.

Table V
Estimated Gross and Net Revenues From Crude Oil and Natural Gas Production
(million dollars)

	Gross Revenues	Net Revenues
1988:		
Crude Oil	$ 37,448	$ 31,831
Natural Gas	29,851	25,373
Total	$ 67,299	$ 57,204
1987:		
Crude Oil	$ 46,960	$ 39,916
Natural Gas	29,327	24,928
Total	$ 76,287	$ 64,844
1986:		
Crude Oil	$ 39,227	$ 33,343
Natural Gas	30,739	26,128
Total	$ 69,968	$ 59,471

The number of companies in each size class was estimated by dividing the total revenues for the class by the mid-point of the size class range.

Once the revenue and number of companies by size class for the universe were estimated, the number and revenue for non-reporting companies was determined by subtracting the number and revenues of responding companies from the universe.

Similar procedures were used for each geographic area.

Modeling Expenditures. Expenditure models were estimated in log-linear form using a general linear model regression technique for each expenditure item included in the survey questionnaire. Survey responses for each item were divided into three groups, and a separate model was estimated for each group. Three groups were chosen over other possible combinations as this division seemed to best fit the expenditure patterns of the respondent companies.

Average unreported revenues by size class were then included in the estimated model equations to derive average unreported expenditures by class for each item. Average expenditures were then multiplied by the estimated number of unreported companies in each class to derive total unreported expenditures. The number of unreported companies had been previously adjusted to reflect blank and zero survey responses.

Survey responses for each item were then added to the estimated unreported expenditures for that item to arrive at the total expenditure estimate.

Table VI
Total Net Lease Revenues by Source
(million dollars)

	Total U.S.	Lower 48 Onshore	Lower 48 Offshore	Total Alaska
Estimated Net Revenues: Oil & Gas Production				
1988:	$ 57,204	$38,439	$12,846	$5,919
1987:	64,844	43,729	13,931	7,184
1986:	59,471	40,258	14,898	4,315
Other Lease Revenues:				
1988:*	$1,646	$1,340	$ 231	$ 75
1987:	824	534	228	62
1986:	726	536	163	27
Royalty Payments Received:				
1988:*	$1,062	$ 986	$ 75	$ 1
1987:	1,034	953	80	1
1986:	1,023	945	77	1
Total Revenues:				
1988:	$ 59,912	$40,765	$13,152	$ 5,995
1987:	66,702	45,216	14,239	7,247
1986:	61,220	41,739	15,138	4,343

* Data not strictly comparable to previous years.

Table VII
PRODUCTION AND REVENUES--TOTAL UNITED STATES
(19 Largest Companies)

	Net Revenues	Gross Revenues
Sales Volumes		
Crude Oil (MB)	1,910	2,247
Natural Gas (MMCF)	7,643	8,991
Lease Revenues (million dollars)		
Crude Oil	$ 21,805	$ 25,652
Natural Gas	12,594	14,817
Income from Royalties	489	489
Other Lease Revenues	785	785
TOTAL	$ 35,673	$ 41,743

Note: This additional table permits comparisons of expenditure data for the 19 largest companies on a unit of production or percent of revenue basis.

APPENDIX A:

Questionnaire and Instructions

1988 SURVEY ON OIL AND GAS EXPENDITURES

RETURN TO:

AMERICAN PETROLEUM INSTITUTE
STATISTICS DEPARTMENT--ATTN: EPS
1220 L STREET, N.W.
WASHINGTON, D.C. 20005

DUE DATE: May 1, 1989

GENERAL INSTRUCTIONS:

This survey collects data on expenditures incident to finding, developing, and producing oil and gas in the United States. Geographic areas are subdivided for Onshore Lower 48 States, Offshore Lower 48 States, and Alaska, including State and Federal offshore waters.

Offshore includes leases seaward from the coastline (i.e., the line of ordinary low water along that portion of the coast which is in direct contact with the open sea, and the line marking the seaward limit of inland waters.

Report your company's operations on a calendar year basis for the survey year. Revenues and expenditures should be reported only by those directly engaged in drilling and producing operations. Do not report revenues or expenditures applicable to gas processing plants or gas systems.

Please fill in all blanks. If you had no expenditures for any line item, please indicate such with a "0" (zero). If information is not available for a given item, provide your "best estimate" or note "NA" (not available). Please do not substitute a "0" for data that are not available. Since expenditures, not net cash flow, are being reported, the only negative values possible are for lines 15 and 29.

REVENUES:

Report as revenues the receipts of producers from their net (after royalty payments, production payment disbursements, and net profits disbursements) company interest in oil and gas production, recorded in the books of account in the calendar year.

Also include certain non-operating revenues from other sources such as royalty interests, net profit interest receipts, production payments receipts, etc., owned in productive properties.

EXPENDITURES:

Report as expenditures the net company working interest share of the total expenditures for both operated and nonoperated properties. Report only the expenditures recorded on the books of account (whether actually paid or accrued, for current expenses or on capital account) in each category during the survey year.

Do not report non-cash items such as depletion, depreciation, amortization, etc., as overhead, except in G&A Overhead (lines 22, 33, and 42), where depreciation may be charged for office buildings (if the total cash expenditure for such facilities are not reported elsewhere).

COMPANY CONTACT:

Name: _____

Telephone: _____

(Please correct any errors in mailing label)

_____
Op. Code #

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1988 SURVEY ON OIL AND GAS EXPENDITURES

OPERATOR CODE NO.: _____

LINE NO.	ITEM (a)	Unit of measure (b)	NET COMPANY INTEREST BASIS			
			TOTAL UNITED STATES (c)	GEOGRAPHICAL AREA		
				TOTAL ALASKA (d)	LOWER 48	
					ONSHORE (e)	OFFSHORE (f)
1	**I. SALES VOLUMES** A. Total crude petroleum and condensate	Thousand barrels				
2	B. Natural gas	Million cubic feet				
3	**II. TOTAL LEASE REVENUES**	Thousand dollars				
4	A. Total crude petroleum and condensate					
5	B. Natural gas					
6	C. Income received from oil and gas royalties					
7	D. Other lease revenues from producing operations					
8	**III. TOTAL EXPENDITURES (CAPITALIZED AND EXPENSED)**					
9	A. Total exploration expenditures					
10	1. Total drilling & equipping expenditures					
11	a. Total completed well costs					
12	1. Dry holes					

13	2. Oil wells	Thousand dollars				
14	3. Gas wells					
15	b. Work-in-progress adjustment					
16	2. Lease and land acquisitions of nonproducing acreage					
17	3. Land department, leasing, and scouting					
18	4. Geological and geophysical					
19	5. Lease rents					
20	6. Test hole contributions					
21	7. Other exploration expenditures, including direct overhead					
22	8. General and administrative overhead not reported elsewhere					
23	B. Total development expenditures					
24	1. Total drilling & equipping expenditures					
25	a. Total completed well costs					
26	1. Dry holes					
27	2. Oil wells					
28	3. Gas wells					
29	b. Work-in-progress adjustment					
30	2. Lease equipment					
31	3. Fluid injection and improved recovery programs					
32	4. Other development expenditures, including direct overhead					
33	5. General and administrative overhead not reported elsewhere					

(Please complete Lines 34 through 45 on reverse side)

A separate set of "Notes and Instructions" (enclosed) provides a detailed definition for each category.

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1988 SURVEY ON OIL AND GAS EXPENDITURES

OPERATOR CODE NO.: _____

LINE NO.	ITEM (a)	Unit of measure (b)	NET COMPANY INTEREST BASIS			
			TOTAL UNITED STATES (c)	GEOGRAPHICAL AREA		
				TOTAL ALASKA (d)	LOWER 48	
					ONSHORE (e)	OFFSHORE (f)
34	C. Total production expenditures	Thousand dollars				
35	1. Total direct operating expenditures					
36	a. Operating and maintenance					
37	b. Well workovers					
38	c. Other direct expenses					
39	2. Total indirect operating expenditures					
40	a. Windfall profit tax					
41	b. Other taxes (excl. income taxes)					
42	c. General & administrative overhead					
43	d. Other indirect expenses					
44	**IV. OTHER OPERATOR INFORMATION** A. No. producing oil wells					
45	B. No. producing gas wells					

Please note any changes in your reporting methodologies or your company's operations during 1988 (i.e., mergers or acquisitions) that will cause differences in the comparability of 1988 data to the previous year(s):

API SURVEY ON OIL AND GAS EXPENDITURES

NOTES AND INSTRUCTIONS

I. SALES VOLUMES

Line 1 — Total crude petroleum and condensate — Report volumes in thousand barrels (42 U.S. gallons at 60 degrees Fahrenheit). Include hydrocarbons which liquify at atmospheric pressure and temperature and are separated at lease surface facilities. Exclude liquid products derived from natural gas liquid plants which should be included with natural gas volumes on line **2**. Report the net company interest sales from all leases in which all or part of the working interest is owned.

Line 2 — Natural gas — Report the volume of raw natural gas including plant condensate volumes but excluding residue gas used for lease operations such as recycling or lifting. The volumes reported should be adjusted to a pressure base of 14.73 pounds absolute at 60 degrees Fahrenheit.

II. TOTAL LEASE REVENUES

Line 3 — Total lease revenues — Report the totals of lines **4**, **5**, **6**, and **7**.

Line 4 — Crude petroleum and condensate — Report values comparable to the related volumes reported in I. SALES VOLUMES. Do not include the value of liquid products derived from gas processed at natural gas plants which should be included in line **5**.

Report the revenues received from crude petroleum and lease condensate sales after royalty payments to others and net profit disbursements. Do not deduct production or severance taxes since these should be reported as expenditures.

Line 5 — Natural gas — Report values comparable to the volumes reported on line **2**. Lease revenue should include the lease share of revenue derived from the sale of plant liquids and residue gas and revenues from sales of unprocessed gas.

Report the revenues received from natural gas after royalty payments to others and net profit disbursements. Do not deduct production or severance taxes since these should be reported as expenditures.

Line 6 — Income received from oil and gas royalties — Report the net company interest in revenues from oil and gas royalties for the period. Includes revenues received from oil production payment interests, net profits interests, overriding royalties, etc. Do not include royalty revenue received where both a working and royalty interest exist on the same property. Such royalty interest will be reported on lines **4** and **5** as appropriate.

Line 7 — Other lease revenue from producing operations — Report the net company interest in the revenue received which is incidental to oil and gas operations, such as equipment rentals, receipts from services performed for others, sales of water, steam, CO_2, helium, etc. Do not include revenue attributable to operations of gas processing plants or gas systems, or receipts from sale of assets, producing properties, etc. Do not include revenue applicable to mined sulfur, oil shale, oil sands, uranium, or other mineral operations.

III. TOTAL EXPENDITURES (CAPITALIZED AND EXPENSED)

Line 8 — Total expenditures (Capitalized and expensed) — Report on this line the totals of lines **9**, **23**, and **34**. In this section, the classification of exploratory and development well expenditures should be based on the AAPG well classification as follows:

Exploratory wells include new-field wildcats, new pool wildcats, deeper pool tests, shallower pool tests, and outposts (extensions).

Development wells are those wells drilled to produce oil or gas from pools discovered by previous drilling.

Wells completed successfully in both oil and gas reservoirs should be reported as oil wells (lines 13 or 27 as applicable). Classification of completed wells as between oil and gas should be based on the appropriate State regulatory requirements. Exclude non-cash items such as depletion, depreciation, and amortization, etc., except that on lines **22**, **33**, and **42** depreciation may be charged for office buildings, etc. where the total cash expenditure for such facilities are not reported elsewhere. Exclude capitalized interest payments to detailed expenditures.

Line 9 — Total exploration expenditures — Report on this line the totals of line **10**, **16**, **17**, **18**, **19**, **20**, **21**, and **22**.

Line 10 — Total drilling and equipping expenditures — Report only the expenditures for drilling and equipping exploratory wells incurred during the year covered by this report. Include expenditures for **old wells drilled deeper and redrilled wells,** but exclude expenditures for stratigraphic and core test drilling which are to be reported on line **18**.

Note that lines **12**, **13**, and **14** include prior year expenditures for wells completed during the year covered by this report. However, line **15**, the "Work-in-progress adjustment," provides for an adjustment to these expenditures, so that line **10** shows drilling expenditures for the survey year only. That is, line **10** equals line **11** (the sum of lines **12**, **13**, and **14**) plus or minus line **15**.

Note: For lines **12**, **13**, and **14** report the total cost of wells completed during the survey year. Include costs incurred during prior years.

Line 11 — Total completed well costs — Report on this line the totals of lines **12**, **13**, and **14**, the total cost of wells completed during the survey year, including costs incurred during prior years.

Line 12 — Dry holes — Report expenditures for casing, tubing, and wellhead fittings associated with exploratory dry wells; expenditures for roads, grading, etc.; expenditures for drilling platforms; and all other expenditures incident to exploratory dry wells. Reduce cost by the value of salvaged equipment capable of reuse.

Report the net company interest in all expenditures (reduced by the amount of outside cash contributions, such as bottom hole or dry hole money) for drilling exploratory dry holes.

Lines 13 and 14 — Oil wells and Gas wells — Report expenditures for casing, tubing, and wellhead fittings; expenditures for roads, grading, etc.; expenditures for drilling platforms; and all other expenditures incident to successful exploratory drilling. Exclude all expenditures for equipment beyond the Christmas tree and expenditures for all downhole pumping and artificial lift equipment which should be reported on line **30**.

Report the net company working interest in all expenditures (reduced by the amount of outside cash contributions, such as bottom hole money) for drilling successful exploratory wells.

Line 13 — Oil wells — Report the expenditures for exploratory wells completed for production where the result of the drilling was to find oil reserves.

Line 14 — Gas wells — Report the expenditures for exploratory wells completed for production where the result of the drilling was to find gas (other than casinghead gas) reserves.

Line 15 — Work-in-progress adjustment — Work-in-progress is defined as those drilling and equipping expenditures spent in prior years on current year completions minus the drilling and equipping expenditures in the current year on future year completions. The net amount (plus or minus) is the work-in-progress adjustment. Thus, if $10,000 were spent last year on a current year completion and $12,000 was spent this year on a well to be completed next year, the work-in-progress adjustment would be $2,000.

Report the net company interest in the amount of work-in-progress at the end of the survey year minus earlier years' drilling and equipping expenditures for wells completed during the year. If such prior year work-in-progress exceeds the current year work-in-progress, indicate a negative number by enclosing the figure in parentheses.

Line 16 — Lease and land acquisition of non-producing acreage — Report the net company interest in expenditures incurred during the report year for acquiring undeveloped acreage, including lease bonuses, advance initial rentals which, because of unusual circumstances, are actually in the nature of a bonus, and any other outlays necessary to acquire leases, mineral rights, and fee lands incident to oil and gas exploration. Exclude annual rentals and other lease carrying expenditures which should be reported on line **19**.

Line 17 — Land department, leasing, and scouting — Report the net company interest in all land department, scouting, and lease acquisition expenditures, except the actual outlays for purchase, land leasing, and rentals which should be reported on lines **16** and **19**.

Line 18 — Geological and geophysical — Report the net company interest in all expenditures for geological and geophysical exploration. Include expenditures for capital equipment identifiable with G & G and for core drilling (such as some types of slim hole stratigraphic tests) where the intention in advance of drilling is not to complete the well as a producing well, and/or when such tests are drilled in such a manner that productive completion is not possible.

Line 19 — Lease rents — Report the net company interest in expenditures made during the year for lease rentals and other expenditures for carrying leases, such as shut-in royalties and annual payments. Omit land department, leasing, and scouting expenditures, which should be reported on line **17**, and advance rentals which are actually in the nature of a bonus, which should be reported on line **16**.

Line 20 — Test hole contributions — Report the net company interest in all contributions made toward test wells, including dry hole money, bottom hole money, etc. Do not include the cost of acreage contributions.

Line 21 — Other exploration expenditures, including direct overhead — Report the net company interest in all expenditures not listed on lines **10** through **20** which relate directly to exploration for oil and gas, whether such expenditures are capitalized or expensed. Include expenditures for exploratory capital equipment constructed or purchased not included in lines **10** through **20**. Include direct overhead, especially district field exploration functions, e.g. district supervisory salaries; ad valorem taxes on non-producing leases; and taxes on buildings and equipment used for exploratory purposes.

Exclude exploration overhead costs which cannot be directly identified with exploratory activities undertaken during the period which should be reported on line **22**. Exclude all exploratory outlays not specifically devoted to oil and gas operations, such as for mined sulfur, oil shale, uranium, or other minerals.

Line 22 — General and administrative overhead not reported elsewhere — Report the net company interest in all general operating and administrative expenditures above the field level, which are applicable to exploration activities, excluding only those items which have been directly classified elsewhere. Include salaries, office expenditures, and research and development (R&D) expenditures.

If engaged in activities other than oil and gas, include under this heading only that portion of general and administrative expenditures applicable to oil and gas exploration. Do not include interest on investment or State and Federal income taxes.

General and administrative overhead reported in total should be distributed to exploration, development, and production on a basis of reasonable pro rata share or in accordance with your company's allocation practice.

Line 23 — Total development expenditures — Report on this line the totals on lines **24**, **30**, **31**, **32**, and **33**.

Line 24 — Total drilling and equipping expenditures — Report only the expenditures for drilling and equipping development wells incurred during the year covered by this report. Include expenditures for **old wells drilled deeper and redrilled wells**, but exclude expenditures for well workovers which are to be reported on line **37**. Also exclude expenditures for service wells which are to be reported lines **31** or **32**.

Note that lines **26**, **27**, and **28** include prior year expenditures for wells completed during the year covered by this report. However, line **29**, the "Work-in-progress adjustment," provides for an adjustment to these expenditures, so that line **24** shows drilling expenditures for the survey year only. That is, line **24** equals line **25** (the sum of lines **26**, **27**, and **28**) plus or minus line **29**.

Note: For lines **26**, **27**, and **28** report the total cost of wells completed during the survey year. Include costs incurred during prior years.

Line 25 — Total completed well costs — Report on this line the totals of lines **26**, **27**, and **28**, the total cost of wells completed during the survey year, including costs incurred during prior years.

Line 26 — Dry holes — Report expenditures for casing, tubing, and wellhead fittings associated with development dry holes; expenditures for roads, grading, etc.; expenditures for drilling platforms; and all other expenditures incident to development dry wells. Reduce cost by salvage value of equipment capable of reuse.

Report the net company interest in all expenditures for drilling development dry holes.

Lines 27 and 28 — Oil wells and Gas wells — Report expenditures for casing, tubing, and wellhead fittings associated with successful development wells; expenditures for roads, grading, etc.; expenditures for drilling platforms; and all other expenditures incident to successful development drilling. Exclude all expenditures for equipment beyond the Christmas tree and expenditures for all downhole pumping and artificial lift equipment, which should be reported on line **30**. Also exclude expenditures for drilling injection wells which should be reported on line **31**.

Report the net company interest in all expenditures for drilling successful development wells.

Line 27 — Oil wells — Report the expenditures attributed to wells completed for production of crude petroleum within proved areas of oil reservoirs to depths of stratigraphic horizons known to be productive.

Line 28 — Gas wells — Report the expenditures attributed to wells completed for production of natural gas (other than casinghead gas) within proved areas of gas reservoirs to depths of stratigraphic horizons known to be productive.

Line 29 — Work-in-progress adjustment — Work-in-progress is defined as those drilling and equipping expenditures spent in prior years on current year completions minus the drilling and

equipping expenditures in the current year for future year completions. The net amount (plus or minus) is the work-in-progress adjustment. Thus, if $10,000 were spent last year on a current year completion and $12,000 was spent this year on a well to be completed next year, the work-in-progress adjustment would be $2,000.

Report the net company interest in the amount of work-in-progress at the end of the survey year minus earlier years' drilling and equipping expenditures for wells completed during the year. If such prior year work-in-progress exceeds the current year work-in-progress, indicate a negative number by enclosing the figure in parentheses. Exclude injection wells in progress which are to be reported on line **31**.

Line 30 — Lease equipment — Report the net company interest in all lease equipment expenditures beyond the Christmas tree installation, including flow lines, flow tanks, field separators, heater-treaters, production platforms, and related facilities. Include expenditures for all normal pumping and other artificial lift equipment, including downhole installation required for primary production.

Line 31 — Fluid injection and improved recovery programs — Report the net company interest expenditures in fluid injection and improved recovery programs which include gas injection, water injection, steam injection, miscible phase, in situ combustion, etc., associated with oil and gas production. Report expenditures for procuring and installing all facilities and for drilling service wells, or converting existing wells to service wells, associated with such programs.

Include pumps, compressors, engines, tankage, gathering and injection lines, treating facilities, special downhole and surface equipment, etc. Service wells include wells used for gas injection, water injection, steam injection, air injection, and water supply for injection.

Do not include expenditures for observation wells, salt water disposal wells, water supply wells, or other wells required for primary production operations, which should be included in line **32** with other development expenditures.

Line 32 — Other development expenditures, including direct overhead — Report the net company interest in all expenditures not included in lines **24**, **30**, or **31** which relate directly to development operations for oil and gas, whether such expenditures are capitalized or expensed. Include expenditures for capital equipment constructed or purchased.

Include direct overhead, especially at district and field level, where such overhead can be identified with the development functions (e.g. district supervisory salaries and taxes on buildings and equipment used for development operations).

Exclude overhead costs which cannot be directly identified with development activities undertaken during the year. Exclude all development outlays not specifically devoted to oil and gas operations, such as for mined sulfur, oil shale, uranium, or other minerals.

Line 33 — General and administrative overhead not reported elsewhere — Report the net company interest in all general operating and administrative expenditures above the field level, which are applicable to development activities, excluding only those items which can be directly classified on line **32**. Include salaries, office expenditures and R&D expenditures. If engaged in activities other than oil and gas, include under this heading only that portion of general and administrative expenditures applicable to oil and gas development operations. Do not include interest on investment or State and Federal income taxes.

General and administrative overhead reported in total should be distributed to exploration, development, and production on a basis of reasonable pro rata share or in accordance with your company's allocation practice.

Line 34 — Total production expenditures — Report on this line the totals of lines **35** and **39**. Do not include expenditures applicable to gas processing plants or gas systems.

Line 35 — Total direct operating expenditures — Report on this line the totals on lines **36**, **37**, and **38**.

Line 36 — Operating and maintenance — Report the net company interest in normal daily operating expenses such as wages and transportation for field personnel directly associated with oil and gas production; materials and supplies consumed; and field office expenses as well as surface repair and maintenance on lease equipment. Also report all other operating and maintenance expenses except workover expense which is reported on line **37**.

Line 37 — Well workovers — Report the net company interest in all expenditures directly related to well workovers including expensed material, contract labor, etc.

Line 38 — Other direct expenses — Report the company net interest in all other direct production expenses not included on lines **36** and **37**.

Line 39 — Total indirect operating expenses — Report on this line the totals on lines **40**, **41**, **42**, and **43**.

Line 40 — Windfall profit tax — Report the Federal excise tax expenses attributable to the Crude Oil Windfall Profit Tax Act of 1980, including adjustments such as those resulting from the net income provision.

Line 41 — Other taxes, excluding income taxes — Report the net company interest in total payments for ad valorem, production, or severance taxes to State and local governments. Do not reduce the value of crude oil and natural gas produced at the wellhead by such amounts. Exclude ad valorem taxes on undeveloped properties and property taxes on buildings and equipment used for exploratory purposes, which should be included on line **21**; ad valorem taxes on office buildings or other facilities used for development purposes, which should be included on line **32**. Do not include State or Federal income taxes or Federal excise taxes.

Line 42 — General and administrative overhead — Report the net company interest in all general operating and administrative expenditures above the field level which are applicable to production activities, except those which are included in line **35**.

General and administrative overhead reported in total should be distributed to exploration, development, and production on a basis of reasonable pro rata share or in accordance with your company's allocation practice.

Line 43 — Other indirect expenses — Report the net company interest in all indirect expenses applicable to producing operations which are not included in lines **40**, **41**, and **42**. Do not include interest on investment or State and Federal income taxes. Exclude expenses not related to oil and gas operations, such as those related to oil shale, mined sulfur, etc.

IV. OTHER OPERATOR INFORMATION

Line 44 — Number of producing oil wells — Report the number of producing oil wells in which your company has a net working interest. The number reported should be the sum of your fractional interest in the producing wells. Round the sum of the fractional interest for the number of wells to the nearest tenth of a well. Wells producing from both oil and gas reservoirs should be reported as producing oil wells.

Line 45 — Number of producing gas wells — Report the number of producing gas wells in which your company has a net working interest. The number reported should be the sum of your fractional interest in the producing wells. Round the sum of fractional interest for the number of wells to the nearest tenth. Producing gas wells are those wells in which one or more zones produce natural gas.

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